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ABSTRACT

This manual provides guidance in the use of the Integrated Library System (ILS), a library minicomputer system in which all automated library functions are processed against a single database. It is oriented toward ILS users with no ADP training or experience. Written in MUMPS, a higher-level language, the system includes the following bibliographic features: the tag create/edit process, priority tag groups, selection strategy, tape handling, work space and master bibliographic file (MBF) editing, addition/modification/deletion of MBF records, and original cataloging. Appendices include an ASCII character collating sequence and descriptions of ILS bibliographic functions in relation to the file structures used. Illustrations and flow charts are provided. (FM)

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A Guide to Using the Bibliographic Features of the Integrated Library System (ILS)

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ABSTRACT

This manual is a guide to using the bibliographic features of the Integrated Library System (ILS), a library minicomputer system in which all automated library functions are processed against a single database. The document is oriented toward ILS users with no ADP training or experience; no attempt is made to provide documentation at the programmer level.

Since this guide covers both those ILS features which are currently available and those which are now being designed or implemented, the level of detail provided varies. In general, the ILS functions which are not currently available are discussed only in general terms and are characterized as "not yet operational." The available functions are covered in sufficient detail to enable the reader to use them without referring to other documents.

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I. INTRODUCTION

1.1 Background

In general, automated library systems have not been designed to process all automated library functions (cataloging, circulation, reference, serials check-in) against a single bibliographic database. The recent exceptions to this rule have been either too large to be cost-effective in a single library environment (the Washington Library Network) or implemented only on a single vendor's equipment (the system being developed by University of Minnesota Biomedical Library).

The Integrated Library System (ILS) is a library computer system developed by the Lister Hill National Center for Biomedical Communications, the research and development arm of the National Library of Medicine. The ILS is designed to take advantage of modern minicomputer technology; it is written in a higher-level language (MUMPS), which is available on several minicomputers. Its core is the Master Bibliographic File (MBF), a single file of bibliographic information which supports all ILS functions.

1.2 Purpose

This manual is designed as a guide to using the bibliographic features of the ILS. It is oriented toward ILS users with no ADP training or experience.

1.3 Scope

Since this guide covers both those ILS features which are currently available and those which are now being designed or implemented, the level of detail provided varies. In general, the ILS functions which are not currently available are discussed only in general terms and are characterized as "not yet operational."

The available functions are covered in sufficient detail to enable the reader to use them without referring to other documents. Since the ILS system provides details of available options in response to a "?" input at any point, such details are not repeated here. Rather, guidance is provided on the functions provided by the ILS options.

No attempt is made here to provide documentation of the ILS at the programmer level.

2. HOW TO USE THE BIBLIOGRAPHIC FEATURES OF THE ILS

2.1 Database Loading from Bibliographic Tapes

2.1.1 General

All of the ILS programs needed to load a bibliographic database may be accessed by entering

C Q

on the database modification terminal. At this point, any of the steps involved in the loading process may be started by selecting the appropriate option, as discussed in detail in the following sections.

Figure 2.1 illustrates the complete process of loading or adding to an ILS database from a bibliographic tape. The steps in this diagram are covered in detail in the sections below.

2.1.2 Tag Create/Edit Process

The first step in creating a Master Bibliographic File (MBF) for a specific ILS installation is the generation of a profile of the data to be included in that file. This profile is used by the ILS to:

1. Define the content, ordering and indexing of the Master Bibliographic Records (MBRs) comprising the MBF.
2. Select the records to be input to the Work Space, a temporary storage area for bibliographic records in the ILS.

Figure 2.2 illustrates the steps involved in the creation of this profile. This process is described below.

The ILS contains a complete list of all valid OCLC/MARC tags, subfields, subfield codes and indicators. This list should be printed out by using the option of

OUTPUT TAGS

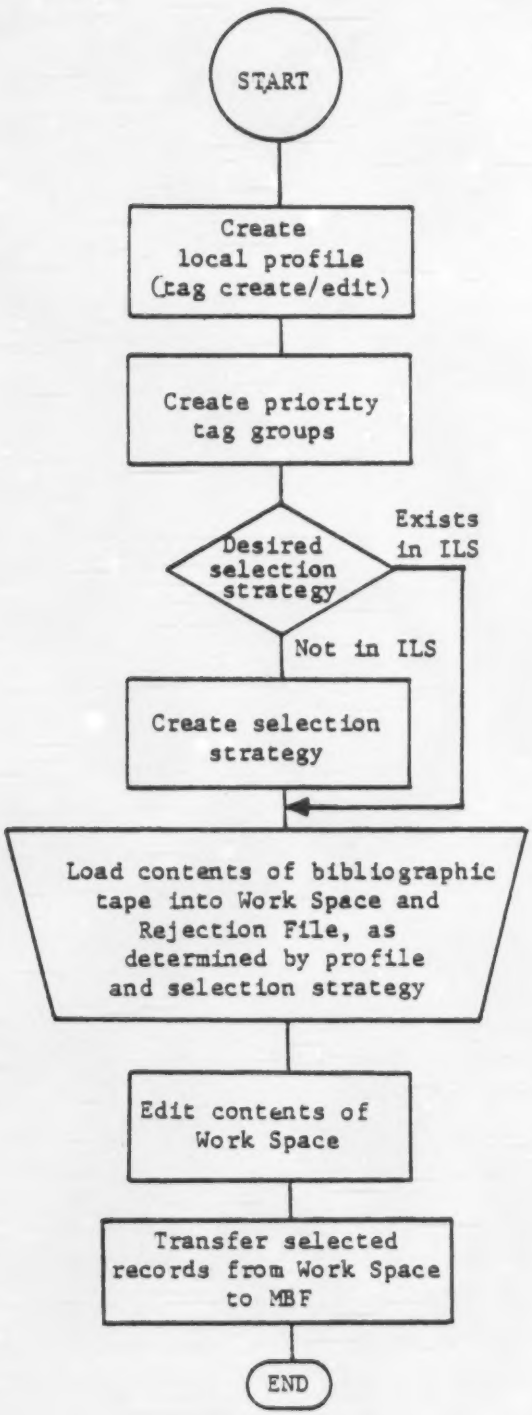

START
Create local profile (tag create/edit)
Create priority tag groups
Desired selection strategy
Exists in ILS
Not in ILS
Create selection strategy
Load contents of bibliographic tape into Work Space and Rejection File, as determined by profile and selection strategy
Edit contents of Work Space
Transfer selected records from Work Space to MBF
END

FIGURE 2.1
DATABASE LOADING FROM A BIBLIOGRAPHIC TAPE

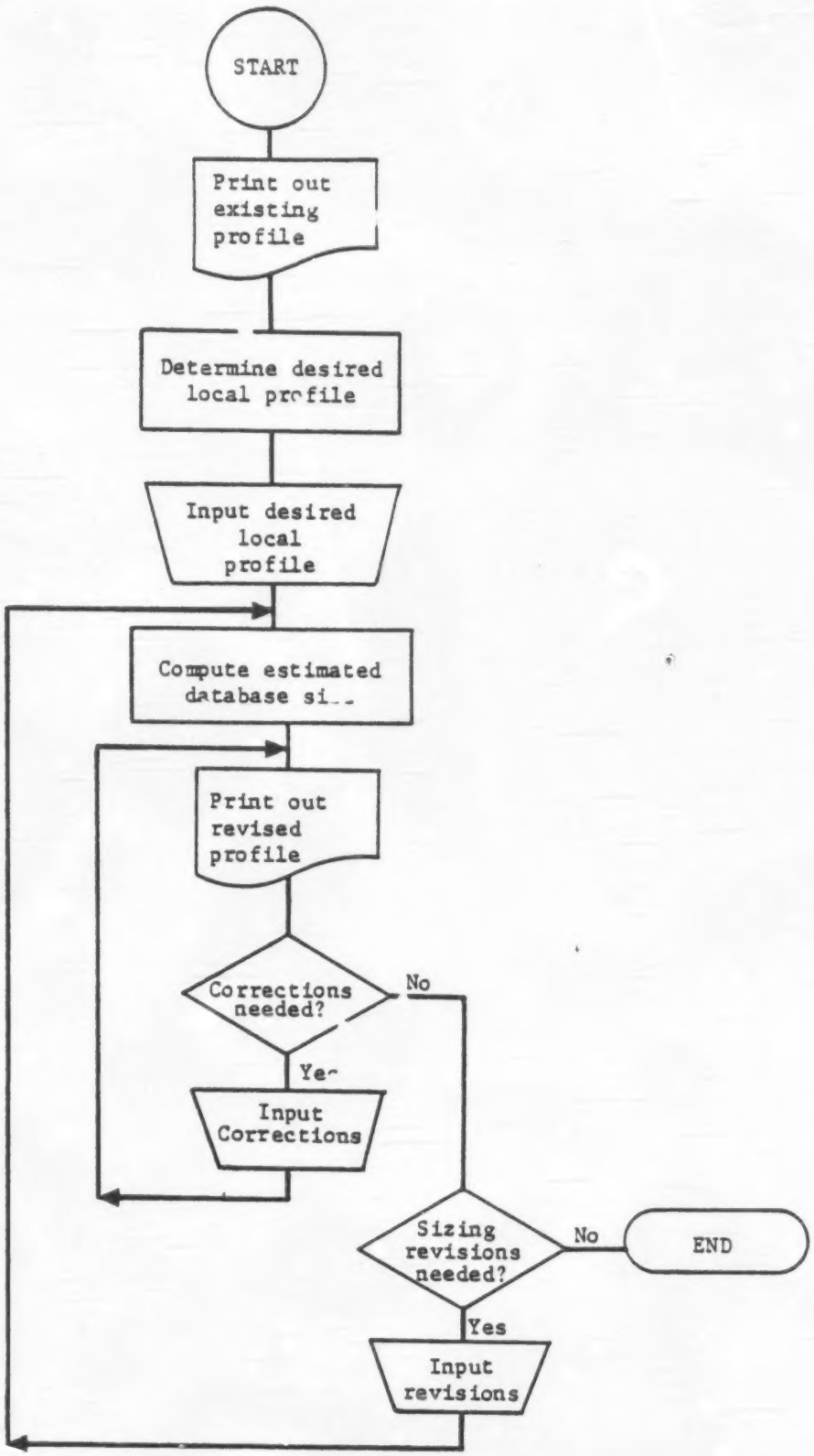


FIGURE 2.2
TAG CREATE/EDIT PROCESS

to provide a basis for selecting a profile. Figure 2.3 shows a sample section of this printout.

The list printed out should be reviewed in detail. For each valid tag whose data are to be included in the MBF, the following information should be determined:

1. The maximum number of occurrences ("repeats") of data for this tag to be included in the MBF.
2. Whether the individual MBRs may be accessed ("indexed") by the data for this tag.
3. The MIIS node, a one or two character code which must be different for each tag included. It is used to indicate the relative physical position of the data for this tag in the MBF.
4. For each valid subfield code and indicator for this tag:
   a. Whether data for the subfield code are to be included in the MBF for each bibliographic form (monograph, serial, etc.).
   b. Whether the individual MBRs may be accessed ("indexed") by the data for this subfield code or indicator.

The decisions on inclusion, repeats and indexing directly affect the size of a local ILS MBF and should be made with this factor in mind. For example, limited file space may necessitate the omission of some marginally useful tags or subfield codes or the reduction of the number of repeats for certain tags (such as subject headings).

The selection of the MIIS node for each tag to be included in the local system profile determines the relative speed of access to the data for that tag. Since the MIIS nodes are accessed in ascending ASCII collating order* those data items which are

*See Appendix A. Note that X, Y, Z and ZZ are reserved MIIS nodes and should not be used.

OCLC TAG: 300 NAME: COLLATION/PHYSICAL DESCRIPTION

MIIS NODE: "Z" INDEXED: NO # REPEATS: 1 LOCALLY USED: NO

SUB FLD	NAME	TYPE SER	BKS	A/V	MAP	SMU	MAN	INDEX	LOCAL
a	VOLUMES OR PAGINATION	Y	Y						
a1	ITEM OR ITEMS CATALOGED				Y				
a2	PHYSICAL DESCRIPTION						Y		
a3	PAGINATION (SCORES ONLY)					Y			
b	ILLUSTRATION STATEMENT	Y	Y			Y	Y		
b1	SIZE				Y				
c	HEIGHT	Y	Y		Y	Y	Y		
d	N L C USE ONLY	Y							

FIGURE 2.3
SAMPLE LISTING OF OCLC/MARC TAG INFORMATION

displayed or accessed most frequently (such as title, author and call number) should be assigned lower-valued MIIS nodes.

Once the desired profile has been determined, it should be input to the ILS as follows:

1. Use the option

   TAG CREATE/EDIT

   to add tags or subfield codes or to change the use, indexing or repeat specifications of those tags currently in the system. Note that a new ILS system will specify no indexing or local use for any tags; action is needed to use or index the desired tags. Also note that tag numbers 000-999 are reserved for MARC use; any tags added locally should be designated by any combination of three letters (AAA-ZZZ).

2. Use the option

   INDICATORS CREATE/EDIT

   to add or change the use of OCLC/MARC indicators. Note that these may be listed with the

   LIST (OUTPUT) INDICATORS

   option.

3. A programmer familiar with the ILS should modify the appropriate ILS programs to support the indexing chosen above.

The completed profile should be printed out (as was done initially) and verified against the annotated original profile. The system sizing facility (not yet operational) should then be used to ascertain the predicted local MBF size. If this size exceeds the available space, appropriate adjustments should be made to reduce the number of data items included in the profile. The procedure discussed above should be employed to enter any changes or corrections.

2.1.3 Priority Tag Groups

Some items of bibliographic information may appear in several OCLC/MARC tags. (For example, call number may be indicated by tags 090, 099 and 150.) Such a set of tags may be included in a single priority tag group and the ILS directed to extract the item of information (such as call number) by searching for data for this item in a specified tag order ("prioritized") or by using the data for whichever tag is found first ("don't care"). The desired priority tag groups should be entered into the ILS with the option

PRIORITY TAG GROUPS

2.1.4 Selection Strategy

The next step in creating or adding to a local MBF is the preparation of one or more selection strategies. A selection strategy (1) describes the bibliographic attributes of the records to be input to the Work Space from a bibliographic tape and (2) describes the elements to be input from qualifying records. For example, a selection strategy may be designed to select only monograph records from a tape and to extract only a limited set of data elements from those records. As many selection strategies as needed may be designed.

The items to be determined for each desired selection strategy to determine the records to be selected are:

1. Status Codes: The record status code(s) to be included. The possible codes are:

    n - new record
    c - corrected record
    p - previously CIP (cataloging-in-publication) record
    a - previously partial record
    d - deleted record.

2. Types: The record type(s) to be included. The possible codes are:

    a - language materials, printed
    b - language materials, manuscript
    c - music scores, printed
    d - music, manuscript
    e - maps and atlases, printed
    f - maps, manuscript
    g - motion pictures and films
    h - microform publications
    i - sound recordings, language or spoken
    j - sound recordings, music
    k - pictures, designs, etc.
    l - computer media
    x - authority data, names
    y - authority data, subjects
    n - special instructional materials
    o - kits.

3. Bibliographic Levels: The bibliographic form(s) to be included. The possible codes are:

    a - analytic
    c - collections
    m - monographs (single manuscripts)
    s - serials.

4. Completeness Codes: The encoding level(s) to be included. The possible codes are:

    b (blank) - full level
    1 - sublevel 1
    5 - sublevel 5 (partial record)
    8 - sublevel 8 (CIP record)
    0 (zero) - full level (NLC local use)
    I - OCLC participant input record
    K - OCLC participant input sublevel record
    L - non-MARC record; machine record derived from non-OCLC, non-LC source
    O - order record
    E - OCLC system identified an error in MARC record
    W - OCLC system identified a possible error in MARC record
    J - MARC deleted record, OCLC retains it.

5. Descriptive Categories: The descriptive cataloging form(s) to be included. The possible codes are:

    ∅ (blank) - record is in non-ISBD form
    i - record is in full ISBD form
    p - record is in partial ISBD form
    r - record is in provisional ISBD form.

The additional components of each selection strategy which describe the elements to be input from the selected records are:

1. Tags, subfield codes and indicators for which data are to be included for each bibliographic form. Note that these specifications override those indicated in the tag create/edit process for the purpose of extracting data from a bibliographic tape, i.e., data may be included in the Work Space which are excluded from the MBF.
2. Priority tag groups to be used.

Each selection strategy may be as broad or as narrow as desired, within the limits of the relevant information available in the tape records. The specified selection strategy will be used by the ILS either alone or in conjunction with the local profile described in the tag create/edit process to select the records to be transferred from the bibliographic tape to the Work Space, as follows:

1. If the ALL option is used in the selection strategy for the tags to be included, the local profile will be used by the ILS to select tags, subfield codes and indicators for inclusion.
2. If specific tags, subfield codes and indicators are listed in the selection strategy, they will be used to select elements for inclusion. Note that this approach will not result in modifications to the local profile.

The combination of the tag create/edit, priority tag group and selection strategy decisions create a profile for a set of

bibliographic records. Since these decisions may vary, the combined sets of bibliographic records in a local ILS MBF will have a combined profile as shown conceptually in Figure 2.4.

2.1.5 Tape Handling

To effect the transfer of bibliographic records from a MARC/OCLC tape to an ILS Work Space, the option called

BEGIN TO PROCESS TAPE

should be used after mounting the tape on the tape drive. This ILS option will verify that the tape mounted is in fact the one desired and will request a Work Space designation (not yet operational) before beginning processing. The Rejection File and the selected Work Space will be cleared and those records chosen by the specified selection strategy and the local profile are input to the Work Space. The remaining records (i.e., those excluded by the selection strategy employed) are stored in the Rejection File. The data flow occurring in this process is illustrated in Figure 2.5.

The records transferred to the Work Space may be displayed or printed with the ILS option

DISPLAY TAPE OUTPUT

This option may be used to display on the CRT or to print out any or all of the bibliographic records in the Work Space.

2.1.6 Work Space and MBF Editing (not yet operational)

A separate document (not yet available) describes the procedures for editing the records in the Work Space and the MBF.

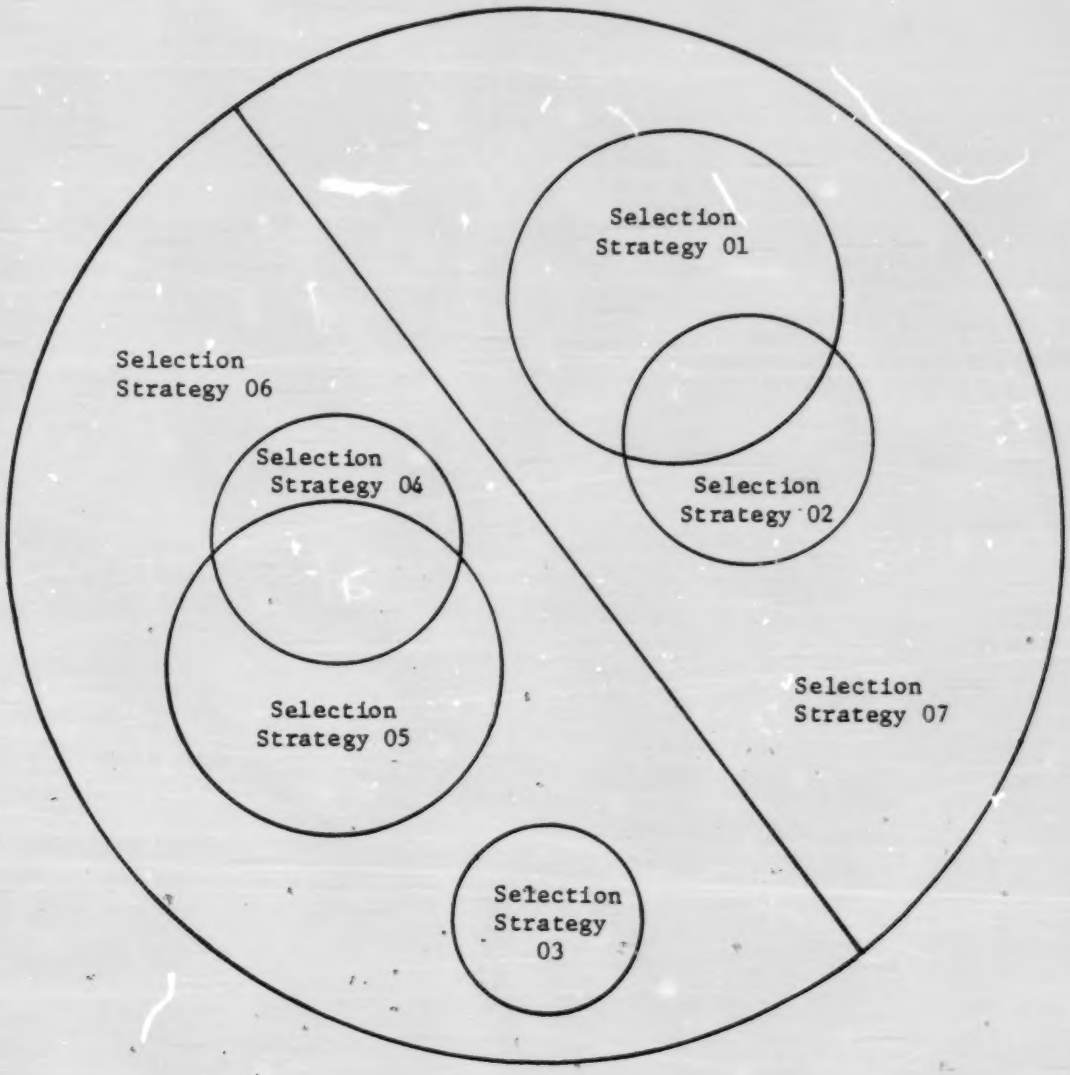


FIGURE 2.4
RELATIONSHIP OF CHOSEN SELECTION STRATEGIES TO A COMBINED LOCAL MBF PROFILE

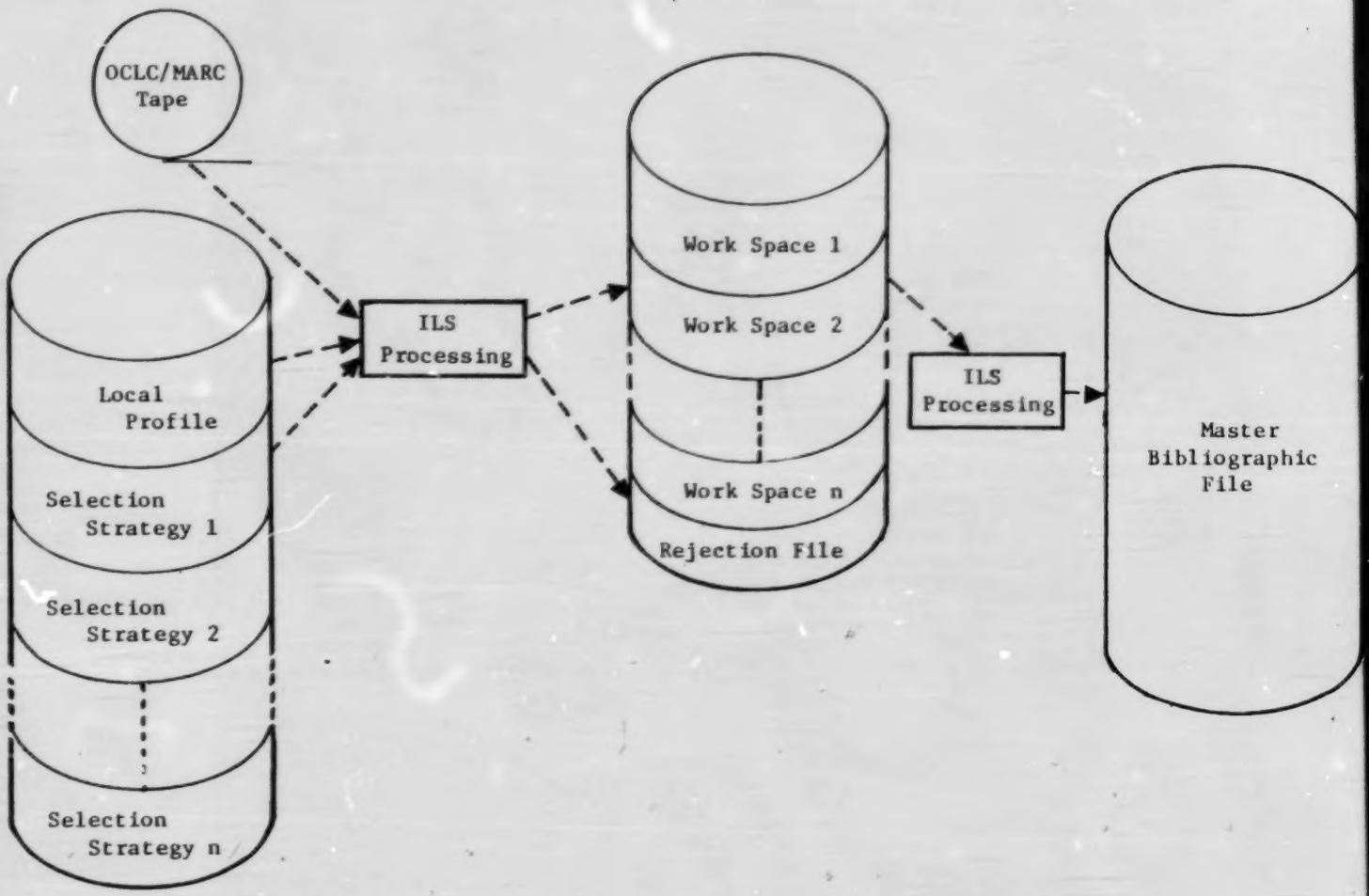


FIGURE 2.5
FLOW OF BIBLIOGRAPHIC DATA FROM A MAGNETIC TAPE TO THE MASTER BIBLIOGRAPHIC FILE

2.1.7 Addition/Modification/Deletion of MBF Records (not yet operational)

Records which are in the Work Space may be:

1. Retained unchanged in th Work Space for later consideration.
2. Modified (edited) and retained in the Work Space.
3. Transferred to the MBF, either unconditionally or on the basis of their contents (i.e., specified values for selected tags).
4. Deleted from the Work Space.

2.2 Original Cataloging (not yet operational)

If a new item is not cataloged in the local MBF, the common ILS inte.face to shared catalogin facilities should be used. This interface (not yet operational) provides a variety of bibliographic utilities. While this approach is not usually cost-effective compared to shared cataloging, it is appropriately used for cataloging local materials.

APPENDIX A

ASCII COLLATING SEQUENCE

Table A.1 lists the ASCII characters which may be used to designate MIIS nodes* in their collated order. Their decimal values are also listed. Since both single characters and combinations of any two acceptable single characters may be used to designate a MIIS node, the decimal values listed may be used to determine the collating sequence of any set of MIIS nodes. For example, MIIS node <> (decimal value 6062) would precede AA (6565) but follow *+ (4243).

Note that non-printing ASCII characters should not be used and that X, Y, Z, XX, YY, ZZ and " (double quote) are reserved.

*See Section 2.1.

TABLE A.1

COLLATING SEQUENCE OF ASCII CHARACTERS
USED FOR MIIS NODES

DECIMAL VALUE	ASCII CHARACTER
33	!
35	#
36	$
37	%
38	&
39	' (apostrophe)
40	(
41	)
42	*
43	+
44	, (comma)
45	- (hyphen)
46	.
47	/
48-57	0-9
58	:
59	;
60	<
61	=
62	>
63	?
64	@
65-87	A-W
91	[
92	\
93	]
94	^
95	_ (underline)
96	`
97-122	a-z
123	{
124	:
125	}
126	~

APPENDIX B

THE ILS BIBLIOGRAPHIC FUNCTIONS IN RELATION TO THE FILE STRUCTURE

B1.1 Introduction

Figure B.1 illustrates the flow of data to and from the various functional types of ILS terminals and among the ILS files. The functions associated with the ILS terminals and the types of data in the bibliographic files are discussed below.

B1.2 ILS Bibliographic Functions

Figure B.2 emphasizes the relationship of the ILS functions to the MBF. The circulation function includes the following features:

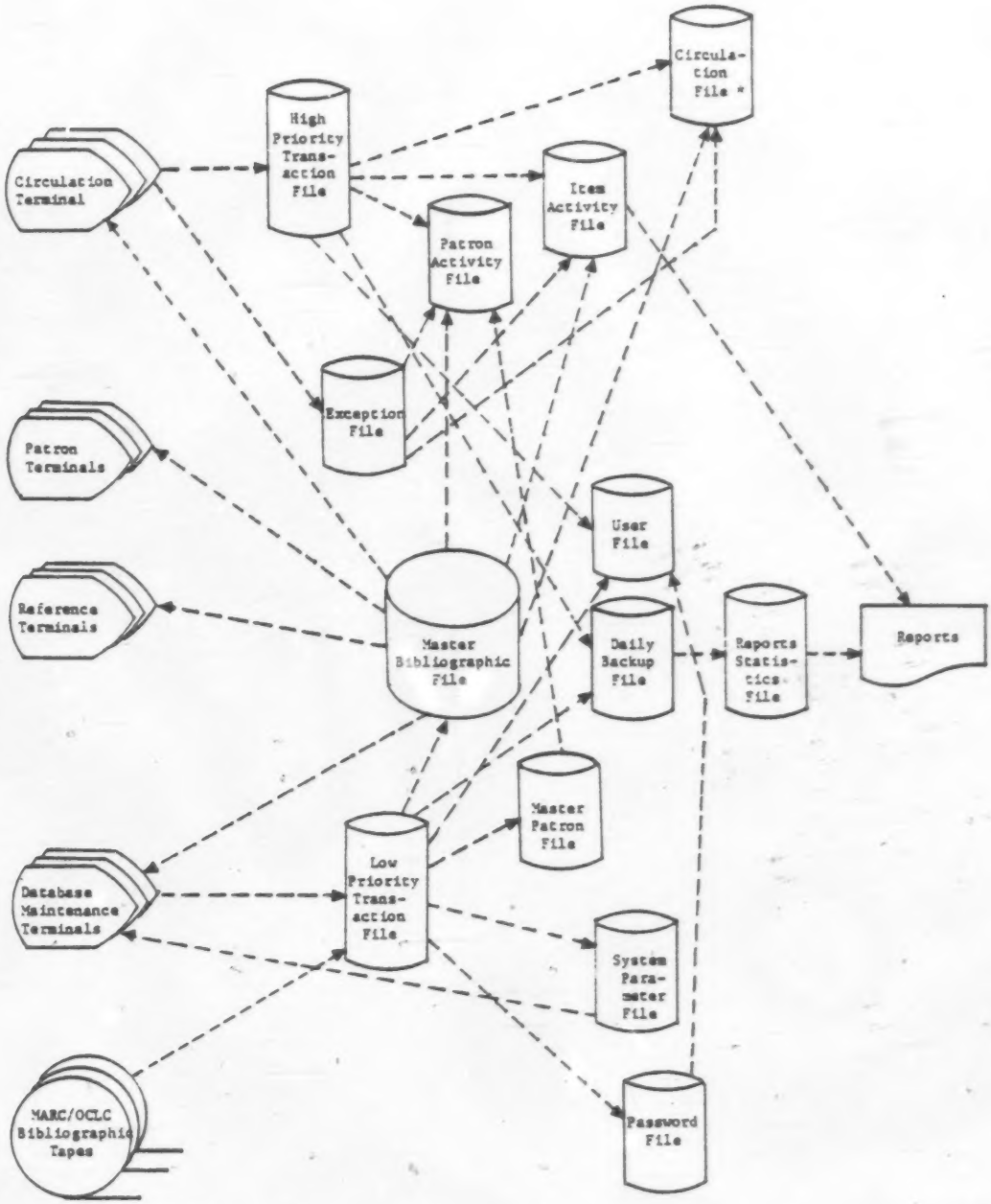
1. Patron Registration - The input and editing of patron data.
2. Temporary Item - The entry of minimal data for an item.
3. Check-out - The association of an item with a patron, with optional verification.
4. Check-in - The removal of a patron-item association, with or without verification.
5. Renewal - The updating of a patron-item association.
6. Patron Inquiry - The display of data for and a list of items checked out to a patron.
7. Item Inquiry - The display of data for an item.
8. Reserve - The placement of a reserve on an item for a patron, with automatic notification when the item becomes available.
9. Exception Actions Against Patrons - The automatic and user-requested flagging of patrons who are over limit, delinquent or have a message waiting.
10. Overdue Processing - The automatic production of overdue notices.

The remaining ILS functions are not yet completely operational. The reference function is the next one to be available.

B1.3 ILS Files

B1.3.1 The Master Bibliographic File

This file contains all of the bibliographic data on each item covered by either entry from a MARC or OCLC bibliographic tape



*Items currently circulating.

FIGURE B.1
THE ILS DATA FLOW: TERMINALS AND FILES

B-3

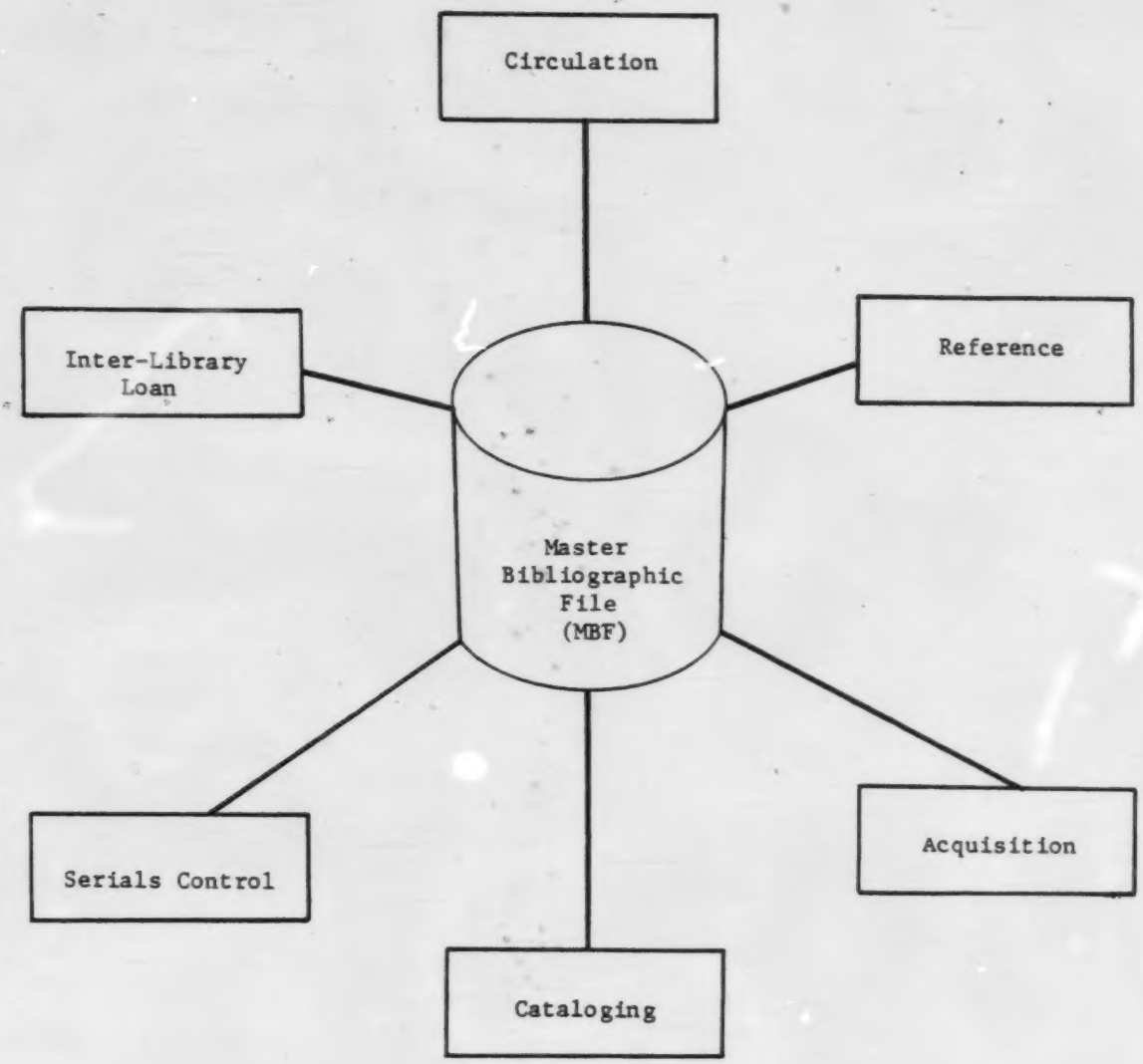


FIGURE B.2
ILS FUNCTIONS IN RELATION TO THE MASTER BIBLIOGRAPHIC FILE (MBF)

or independent cataloging. Both the data common to all copies of an item and that specific to each separate copy are included. An inverted file structure is used to provide the indexing specified by the local ILS implementation.

B1.3.2 The Item Activity File

This file contains information on items which have a special status as being reserved or lost.

B1.3.3 The Circulation File (Items Currently Circulating)

This file, which is purged at locally determined intervals, contains a short entry for each item which has been used during the current or preceding purge periods. The data included are:

1. Item ID.
2. Patron ID.
3. Date last used.
4. Number of external uses.
5. Number of internal uses (shelf commands).
6. Status (null or specified special status).

If the status in a circulation record is not null, a corresponding entry will appear in the Item Activity File.

The data in this file are used to compile usage statistics at the locally determined purge intervals.

B1.3.4 The Patron Activity File

This file contains current information on patron activity (items checked out) and basic information on each patron.

B1.3.5 The Exception File

This file contains data on patrons who are over limit, have a book overdue or have a message waiting and on items which are reserved or snagged.

B1.3.6 The High Priority Transaction Files

This file contains data on circulation transactions which are to be processed further by the ILS.

B1.3.7 The Master Patron File

This file contains all data relevant to each patron.

B1.3.8 The System Parameter File

This file contains such information on the local ILS implementation as the way disk space is organized and is being used at any time.

B1.3.9 The User File

This file relates user numbers (IDs) to their passwords, names and experience levels. It also indicates which functions each user may access. The designation of a user as inexperienced will result in all options being displayed automatically when a user response is required.

B1.3.10 The Low Priority Transaction File

This file contains data on database maintenance functions which are to be processed further by the ILS.

B1.3.11 The Daily Backup File

This file contains data on all transactions which have been input to either transaction file. The daily system backup process consists of copying the contents of this file to magnetic tape. It should be noted that the contents of this file do not provide a record of all system actions which affect files; such information as collected reporting statistics and notations of overdue notices sent out are not recorded here.

B1.3.12 The Reports Statistics File

This file contains data on system activity which are used for reporting purposes. The contents of this file are updated when the daily system backup is done.

B1.3.13 The Password File

This file relates passwords to user number for access to the User File.